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Survey Across Country by way of the Bay D'Est River, Noel Paul's and the Exploits

Report of Progress

For the Year 1888

By JAMES P. HOWLEY, F.G.S.

ST. JOHN'S, N.F.
Robinson & Company, Limited, Press
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R. J. Sandover-Sly

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REPORT

OF

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Geological Survey Office,
March 15th 1889.

Hon. Surveyor General,—

SIR,—I beg to submit the following report, together with the accompanying map of the past season's field-work, also a report of the Museum, during the same period.

The Survey of 1887, extending across the country from Fortune Bay to Bonavista Bay, was undertaken chiefly to ascertain the probable eastern extension of the Magnesian group of rocks of the Bay East River region, whose existence in the latter locality was determined by my predecessor, Mr. Murray, in 1870.

During the past season a similar survey across the central interior, from Bay D'Espoir to the Exploits River, had, for one of its objects, the defining of the Western Boundary of this same group of rocks. Another object of this latter survey was to ascertain the Southern limits of the forest land of the Exploits valley, and the exploration and topographical survey of a large tract of hitherto unknown interior, lying between the Exploits on the one side, and the waters of Bay East, Little River and White Bear Bay River, on the other.

To effect these various objects in the quickest and readiest manner possible, advantage was taken of the Bay East River, already partly surveyed, as affording the easiest means of access to the centre of the island from the south side. The ascent of the latter river was commenced on July 10th, having previously portaged our canoes, baggage, provisions, etc., over some five miles of country, lying between the head of Bay D'Espoir and Long Pond; the first of the suite of large lakes on the River. This was a work of excessive labor, as the country was steep and rugged, and at the

outset we had nearly our entire season's stock of provisions to carry.

The ascent of the river to Pipestone Pond occupied us till the 20th July, owing to the shallowness of the water in many places, the frequent portages and the necessity of making double and treble trips with our canoes. The weather also proved exceedingly rough and stormy for the season and was the means of greatly retarding our progress on the larger lakes.

The survey proper was fairly commenced at Pipestone Pond on the 23rd, and continued upward to Great Burnt Pond, and thence to Crooked Lake, where we arrived on the 1st August. This large lake, which is one of the principal sheets of water on the Bay East River, was, from its central position, selected to form the basis of our season's operations. Here we stored the bulk of our provisions, on an island in the lake; and having partly surveyed it, we proceeded overland, from its western extremity, to a large lake called Meelpaeg* on the head waters of Little River. The portage across was difficult and laborious, but we succeeded in fairly launching our canoes on the latter water on August 7th. The survey of this extraordinary lake occupied us an entire month, and another lake to the eastward, on the same water, was not completed till the 12th of September.

It was now time to commence our long journey to the north. We accordingly returned to Crooked Lake by a different route, taking in Island Pond, the last of the large lakes on the Bay East River. We reached Crooked Lake again on the 15th. While engaged in finishing the survey of the latter lake, we found our stock of provisions running very low, and I concluded to dispatch two of our Indians with the largest canoe to the mouth of the Exploits River for a fresh supply, which I had ordered to be sent on before leaving St. John's. They left us on the 19th September, and we did not again meet them till the 6th October. In the meantime the survey was pushed forward as rapidly as possible with our now diminished crew.

Having finished Crooked Lake, we commenced the ascent of a small and very rugged stream leading directly towards the north. With great labor we gained the height of land on the 24th Septem-

*This is not the lake of the same name mentioned in last year's report as occurring on the Long Harbor River. This is Western Meelpaeg, while the latter is called the Eastern Meelpaeg.

ber. Here the curious phenomenon described in last year's report was again met with, of a lake so situate directly upon the summit level of the country, that the water flowed over as it were, one branch, that which we ascended, running southward to Crooked Lake, and thence by the Bay East River into Bay D'Espoir. The other flowing in the opposite direction, joins Noel Paul's River, thence flows into the Exploits, and finally into Notre Dame Bay.

The difficulty of canoe navigation, owing to the scarcity of the water, and the extreme roughness of the rivers, caused much delay in carrying out this part of the survey, which was, however, kept up continuously. Every yard of our route was carefully measured, and all the interesting topographical details sketched in as we proceeded.

We had reached within about ten miles of Noel Paul's Steady when our provisions began rapidly to fail us. Our supply of flour only held out, and this, with venison, which fortunately we were enabled to procure, embraced our entire stock.

The weather for the past month had been exceedingly wet and stormy, and did not give much promise of improving. The long absence of our two men, and the low condition of our larder at this stage of our journey, all combined to cause us no little anxiety. I began to fear something had gone wrong with the two men, and finally, when on the 6th of October they still failed to make their appearance, I decided to start with one of the two remaining Indians to look for them, and if not successful in finding some traces of them, to give up the survey and proceed forward as speedily as possible.

Leaving my assistant, Mr. Bayly, to continue the work for another day, we proceeded by canoe and on foot several miles down the river, till we reached what we supposed to be Noel Paul's Steady, still we saw nothing of the absent men. It was late at night when we regained our camp, but we were exceedingly rejoiced to find them there before us. They had returned by another route, arriving at camp shortly after we left in the morning, and bringing with them a small stock of the chief necessaries. They had only arrived the evening before at Noel Paul's Steady, where they had left the canoe and the bulk of the provisions. Their journey down to the salt water and back again had been a very trying one, and they made as little delay as possible on the way.

We were now fairly equipped for the remainder of the season, and pushed forward with renewed vigour. Noel Paul's Steady was reached on the 10th of October.

Having surveyed this beautiful stretch of the river upwards some seven miles to a large fall, we commenced the descent on the 16th and reached the main Exploits River on the 19th.

Here our season's field-work ended, having succeeded in connecting the work on both sides with that of previous years. Our journey down the Exploits River was performed with little delay, except at the portages, and a couple of days spent at Badger Brook to rest and repair canoes. We arrived at the mouth of the Exploits River on the 24th of October, and at Exploits Harbor on the 27th. At the latter place we were delayed several days awaiting a passage home; finally, we got aboard the S. S. Plover, and reached St. John's on November the 4th. Our crew, consisting of four Indians and two white men, behaved throughout the long toilsome and unusually backward season with praiseworthy energy and perseverance; and to Mr. Bayly I am indebted for the most valuable asistance in carrying out the topographical work, as well as in entering heartily into all the labor attendant on so arduous a trip across the interior wilds of this Island. He has now become quite expert in the use of the Transit and Michrometer Telescope, and performed all the river work of the season, which when plotted to scale, has proved the care and acuracy with which his bearings and measurements were taken.

Physical Features.

In his report for 1870, the late Alexander Murray, C.M.G., F.G.S., so fully described the physical, topographical, and geological features of the Bay East River Valley, that there is little to add in reference to this section of the country. It is one of the few well wooded valleys on the southern slope of the island, and though the timber is not of such large dimensions as on the Northern Slope, and is comparatively limited in extent, yet it is of the utmost importance to the inhabitants of Fortune, Connaigre, Hermitage and Bay D'Espoir. It is in fact the chief source from whence they obtain their supply of timber, for the ordinary purposes of the fisheries, and for fuel. The prevailing varieties of timber are spruce, fir, tamarack, white and yellow birch, and a fair

sprinkling of pine. Material suitable for boat and schooner building, is obtained here, and small spars, booms, &c., are cut and floated down the river, while a la.ge industry in herring barrels, and oil casks is carried on around the heads of the Bays. Unfortunately, during a comparatively recent period, a great portion of the timber has been denuded by forest fires. In one instance, an extent of over thirty miles of country has been completely devastated, and sooner or later, this would seem to be the fate to which the bulk of the timber of the Island is destined. In most cases, the origin of these fires may be attributed to sheer carelessness, and not unfrequently to wilful criminality on the part of the trappers, rinders, &c. If we wish to preserve what is still left of our valuable forests, some very stringent measures will have to be enforced ere it is too late.

The soil in many parts of the River Valley and around the shores of the Bay D'Espoir, is of fair quality, and many small patches were met with, of good interval land, along the sides of the river and shores of some of the lakes. But there are no extensive tracts of good land, nor does it offer either in an agricultural or lumbering point of view, many attractions to settlers; even were the country more accessible.

In the neighborhood of Pipestone Pond, the Magnesian dolomites peridotites and serpentines of the Quebec Group come to the surface, and give a distinctive character to the surrounding country. The debris of the rocks, containing as they generally do, an excess of Magnesian Salts is not usually productive of good soil nor one conducive to the growth of the best quality of indigenous forest trees; hence the country on the south side of Pipestone Pond is frequently quite bare, or covered only with very inferior timber.

The river from Pipestone Pond to Burnt Pond, trends more westerly, and is very tortuous in its course. It expands at intervals into small steadies with rapid broken water between. Burnt Pond is a lake three miles in its greatest width, by five in length, lying nearly at right angles to the course of the river, and has a surface area of eleven and a quarter square miles. The shores of this lake are of an exceedingly rugged character. Huge angular fragments of granite are strewn in every direction, and the country hereabout presents the appearance of a vast ruin, which is really its true character. The boulders are simply the dislodged and up-

lifted fragments of the parent granitic belt, which striking east and west, forms the central ridge of country, lying between Pipestone and Crooked Ponds. Intense and prolonged glacial action, which is apparent on all sides, has been the chief cause of the destruction.

Two remarkable isolated peaks, or tolts, rise abruptly from the general level, at about three miles distant from the western end of the lake; standing monuments of the source from whence the boulders were derived. As may be judged from the foregoing description, the country around Burnt Pond, presents anything but an inviting prospect; nevertheless, there is a good deal of very fair timber, especially on the western and northern sides, and on several of the islands in the lake.

Not quite a mile of actual running water separates Burnt from Crooked Lake. This beautiful sheet of water is nine miles and a half in length, but being very narrow, for more than half that distance is somewhat less in area than Burnt Pond, being but ten and three quarter square miles. It lies almost eactly east and west Magnetic. The eastern end is wide and studded with numerous islands. The country around it is for the most part well wooded, but the soil is generally thin and rocky. Two rivers of considerable size flow into this lake from the north and north-east. The former, which is considered the main stream, leads upward through a ridge of wooded hills to Island Pond; the last of the larger lakes on the Bay East River proper. It is a turbulent rocky stream of about two miles in extent. Island Pond is about four miles long by one and a half wide, and has a surface area of over six square miles. As its name implies, it is studded with numerous islands. The country is again of a very rugged character, and the timber of inferior quality. The further course of the River for some five or six miles to its head waters, is characterised by a succession of small ponds, connected by short intervals of running water. The north-eastern branch, that which we ascended in our journey across the country, leads upward by a very broken and rapid stream, through several small ponds to the height of land, about ten miles by the course of the river It passes through a tract of country occupied by bare or sparsely wooded ridges, extensive barrens and marshes, studded with innumerable ponds, and tarns, strewn over the surface with granite and trapean boulders. It

is the home of large numbers of caribou and offers great attractions to the sportsman.

Meelpaeg Lake on the Little River Water lies about three miles west from the extreme western end of Crooked Lake. It is an extraordinary sheet of water, spread out in a series of intricate arms, bays, nooks, &c., over a large surface of country, and broken by a perfectly labyrinthine archipelago of islands, large and small, numbering fully one thousand in all. Its greatest length is twelve miles, by an average breadth of three, and its entire surface area covers thirty-five and one-fifth square miles. The actual water surface, however, is probably not more than one half, the remainder being occupied by the islands. Several of these islands average nearly a square mile each. The picturesque beauty of this lake, together with its importance as a prominent geographical feature of the country, rather than any economic value presented by its surroundings, induced me to spend a considerable time in obtaining a correct delineation of its remarkable topography. The survey also included a suite of lakes to the west, which might almost be said to form part of Meelpaeg, as they are only separated by a few yards of running water. The last of these, called Pudops Gospen, by the Indians, is about six miles long, by an average breadth of one mile, and has a surface area of six square miles. This lake is also picturesquely dotted with islands, and has many intricate channels and deep arms extending from either side.

Time did not permit of following the course of Little River to its outlet, a distance, in a straight line, of about thirty-five miles. A splendid view of the country in tha' and other directions, was, however, obtained from the summit of Poetaesinny or Wolf Mountain, a high bare ridge lying to the south of Pudops Gospen. The country towards the southern sea-board, and for a long distance westward, is bare and uninviting, covered only with sparce vegetation, and occupied by extensive marshes and barrens. Several conspicuous tolts rise high above the general level toward the sea coast, especially near the head of Bay de Lievre.

The Valley of Little River downward is narrow and only fringed with a small margin of stunted timber. There are four or five considerable lakes on the river below where we turned back, closely connected with each other, and the river itself is probably

one of the largest, if not the very largest, south-flowing stream of the island.

A large lake known as Poctæsinny Gospen—Wolf Pond—on the Bay de Lievre River, lies about two miles south of the mountain, and eastward, at some twelve or fourteen miles distant, another long lake, with a conspicuous mountain south of it, is known as Ebbegunbaeg. This latter belongs to the same water system, and flows into Meelpaeg on the south side.

In the immediate vicinity of Meelpaeg and Pudops Gospen, the land is low, bounded by low ridges of no great elevation, but in the distance, on either side, several elevated ridges are seen. There is a good deal of fair-sized timber around the shores of these lakes, and on many of the islands, principally spruce, fir and birch. Tamarack, of fair size, is tolerably abundant, but the soil, for the most part, is thin and much encumbered with boulders.

From this, and the surveys of former years, I am now in a position to definitely state that the entire southern watershed of the Island from Fortune Bay westward to Cape Ray, presents an almost uniform character of bare rugged granite ridges, extensive marshes, and innumerable lakes and ponds. In a lumbering or agricultural point of view, its prospects may be said to be *nil*. Yet, in a few of the river valleys, such as the Bay East River, and on the shores of some of the deeper indentations of the coast line, small patches of land capable of raising all ordinary vegetables, might be availed of in conjunction with the fisheries. This is done to a considerable extent in Bay D'Espoir, where several nice clearings were seen, and where good crops of potatoes and hay are raised annually by the settlers.

Crossing over the height of land between Crooked Lake and Noel Paul's Steady, no appreciable difference in the character of the country is met with till reaching within a few miles of the latter river. Here an entire change takes place. The timber assumes a more decided forest aspect, the trees become tall and straight. Birch and Pine begin to assert themselves more decidedly, the barrens and marshes dwindle down to small isolated patches here and there, and ponds are not nearly of so frequent occurrence, or of such large dimensions. Up and down the shores of Noel Paul's Steady there is quite a wide strip of flat or gently sloping land, covered with dense forest. Spruce and fir still predom-

inate, but many extensive patches of white pine are met with on either side. The pine is not of large size, but quite large enough for handling with facility. Measurements were made of several sticks, which ranged from 6½ to 9½ feet in circumference at the butt. From a height on the western side of the Steady an unbroken vista of dense heavy frost extends eastward and westward, up and down the river valley, and away north toward the main Exploits River, as far as the country is visible. Frequent patches of interval land of superior quality fringe the shores of the Steady, and considerable areas of similar land, admirably adapted for hay growing, were found along the courses of the smaller tributaries, flowing into the steady, or river, below.

In descending Noel Paul's River to the Exploits proper, the country improves at every turn, and much fine land and timber were observed on both sides of the stream. The spruce and fir were particularly fine, many of the former sticks suitable for schooners' spars, were seen close to the bank. White birch is quite abundant, tamarack of good size is scattered throughout the forest, and aspen becomes tolerably plentiful on the lower reaches of the river. The stream is a fine one for driving logs, when sufficiently supplied with water in spring and autumn. The land over the greater part of the valley of Noel Paul's River partakes of the same character as that of the main Exploits valley, frequently described in former reports, especially those of 1871, 1875 and 1882. It consists of a sandy loam, underlaid generally by a gravelly subsoil. The decomposed vegetable matter derived from the dense forest, the decay of ages, intermixed with this loam, gives it a very fertile character, which is amply attested by the indigenous forest growth everywhere. The interval lands, in particular, which are often of considerable extent, are composed of very superior soils, containing less sand and much more vegetable matter. They are, in fact, a dark rich mud, (not peat), only requiring a judicious system of drainage to render them some of the best hay-growing lands in the Island. Hundreds of acres of such land were met with during the progress of the survey last fall. Of course until such time as access is afforded to this remote region by means of roads or a railway, these must remain in abeyance. It is useless to talk of utilizing lands situated 100 miles from the sea coast, without such means of access, even were they composed of the richest soil on the globe.

In descending the noble Exploits River from the junction of Noel Paul's, I was more impressed than ever with the wealth of forest and land fit for settlements along this beautiful valley. In this connection I cannot do better than quote the words of my predecessor, Mr. Murray, from his report of 1871:

"No observant person, visiting the valley of the Exploits, could fail to be impressed with the manifold advantages it presents for the prosecution of industrial pursuits, such as lumbering and agriculture. With a splendid river, abundant timber, and a fertile soil, the region that is now a wilderness, might, by energy and enterprise, be soon converted into a thriving settlement, maintaining a large population."

Should the railway system now talked of, ever become a *fait accompli*, and the western extension thereof, traverse this magnificent valley on its course to St. George's Bay, then we may look forward to the fulfilment of Mr. Murray's prognostication, but not till then. It will be fortunate, in the meantime, if the wealth of timber be not destroyed by fire. It has had many narrow escapes from such a calamity in recent times, and indeed a partial fire last June, which swept several square miles near the Badger River, came very near accomplishing the total destruction of the entire forest. I have shown in a previous report for 1882, that such a calamity did, at one time, overtake the forest of this valley, nearly two hundred years ago; and that the present growth only replaces a much larger one, originally occupying this fine region.

Descriptive Geology.

Under this head I propose to give in a general way the purely geological features of the rock formations met with in journeying across the country. The plumbaginous slates steel grey finely Micaceous sand-stones, quartzites, conglomerates, serpentines, dolomites, &c., described by Mr Murray, in his report for 1870, as occupying the Bay East River Valley, and on the shores around Bay D'Espoir, were attributed by him to the Quebec division of the Lower Silurian, now more generally included in the Cambrian formation. In their eastern extension, these rocks were met with last season, on the head waters of the Bay-de-Nord River of Fortune Bay, and were found to butt up against the coarse granitic ridge which forms the chain of hills, of which Mount Sylvester is

the most conspicuous feature. In this portion of their distribution, similar fine silky bluish grey, frequently plumbaginous slates, fine grained micaceous sand-stones, quartzites, and dolomitic bands, interstratified with dark grey hornblendic diorites, were the prevailing characteristics.

Further east on the head-waters of the Terra Nova River, these again were underlaid apparently by a light steel grey, finely laminated micaceous schist. Several great belts of granitic or gneissoid rock, apparently intrusive; though probably in some cases highly metamorphosed sedimentary deposits, strike obliquely across the general trend of the slaty formation, in a course about N. E. and S. W. true. These latter are usually coarse grained greyish hornblendic granite or gneiss. One of these great belts crosses the Bay East River at Soulis Pond, and another at Round Pond. After leaving Pipestone Pond, the course of the river towards Great Burnt Pond is frequently crossed by exposures of the more slaty portions of the formation, partaking of the same general character of those described, as occurring on the river below. At the outlet from Burnt Pond, they are interstratified with beds of fine and coarse grained bluish grey gneiss, with thin slaty divisions. This gneiss is chiefly composed of opaque white quartz and feldspar, with black mica disseminated in scales through the mass The slaty divisions consist of the fine pearly or silky bluish green variety, described before. Here the rocks are in a vertical attitude, and strike N. 40° E. magnetic, or about N. 12° E. true. This would appear to be the extreme western, or rather north-western limit of the so-called Quebec group, in this section of country. No rocks of a similar character were observed further to the westward. In their eastern extension, they strike towards the Gander River, where they were recognized in 1876, extending along the latter from Migueli's Brook, to the Burnt Hill, near the head-waters. It would be important to trace this interesting group of rocks, and have it definitely mapped out between these two points. The mineralogical character, especially of the more highly magnesian portion of the group, favors the supposition that productive deposits of valuable mineral substances may be looked for in some parts of its distribution.

A great belt of coarse grey granitoid rock, which may be a highly metamorphosed portion of the stratified deposits, extends

from Great Burnt Pond to the north side of Crooked Pond, giving rise to that extremely rugged and boulder bestrewn tract of country, mentioned in the first of this report. This same granitoid ridge strikes westward from Crooked Pond, and occupies the country around Meelpaeg, including most of the islands in the lake. It is of a pale grey color, and is composed for the most part of coarse dull white feldspar, opaque white quartz and a little black mica and hornblende. It varies little in composition or color throughout its strike. On the hill-tops immediately over the eastern shores of Meelpaeg, it is flanked by a very micaceous gneiss, dipping S. 80° E., magnetic angle 62°. Poetæsinny or Wolf Mountain, situate some three miles southward from the extreme western end of Pudops Gospen, is composed of fine grained flaggy micaceous grey gneiss, in a vertical position, striking N. 70° E. magnetic. All the country, south and west from here, has the general surface aspect of a granitic or Laurentian region. On the north-side of Crooked Pond, outcrops of a fine steel grey micaceous schist are met with, very similar in appearance to that described in last year's report as occurring on the upper part of the Terra Nova River. These schists form all the hill-ranges on this side, between Crooked and Island Ponds, and striking north-easterly, extend up the country to the watershed, usually in a vertical attitude, or so much contorted and disturbed as to render it impossible to determine their true inclination with certainty. A wide belt of grey granite or gneiss again succeeds the mica schist to the north of the watershed, and extends across to within a short distance of Noel Paul's Steady. Over this tract the surface is very barren, and a vast accumulation of boulders, frequently of immense size, are strewn everywhere; while the bed of the stream we followed was choked with the same material.

On approaching Noel Paul's Steady, no exposures of rock are met with till within about a mile of the river, when some finely laminated bluish grey silky slates are seen in a vertical attitude, striking up the valley. Similar slates, with frequent intrusions of trap rock, crop out along the shores of the steady, and form a series of high ledges at the falls, where they cross the stream obliquely.

On the west side of the steady a peculiar pearly slate, passing

into an impure slaty limestone, dipping south angle 17°, crops out; and on the course of the river downwards at about a mile and a half below the steady, strong bands of bluish grey limestone strike across the river. This is succeeded at intervals by bluish grey slate, but at the lower falls, about two miles from the junction with the main Exploits River, the slates are interstratified with beds of diorite and here assume a hard flint nature approaching feldsites. These again are underlaid by fine conglomerates and sandstones in massive beds. Several large boulders of a very coarse conglomerate, not seen in place, are strewn along the bed of the river. They appeared to be very similar to a coarse conglomerate seen o the shores of the Bay of Exploits. These slates and associated limestones, sandstones, etc., are clearly of one geological horizon, and correspond so closely in lithological character with those of the Exploits valley proper, that there is little doubt of their being identical. The absence of organic remains anywhere amongst the rocks seen this season renders it difficult to establish their exact age, but there are good grounds for assuming the above supposition to be correct.

The few fossils found at the mouth of the Exploits on a former occasion, and the graptolites discovered in the black shales of Little Red Indian Fall on the Main River, (Graptolithus Namosus), were referred by Mr. Billings, late Palæontologist of the Canadian Geological Survey, to indicate an horizon equivalent to the Utica Slate and Hudson River divisions of the Trenton series, at the top of the Lower Silurian formation, now known as the Cambro-Silurian. Further investigation of this region is likely to result in the discovery of other and better defined fossils, which will place the horizon beyond doubt, and probably, also lead to the discovery of other and higher measures, corresponding to the middle Silurian rocks of New World Island, and other parts of the great Bay of Notre Dame. The important bearing which the defining of these geological problems has upon the subject of the soils alone, may be gathered from the fact, that, nearly all the best agricultural tracts of the Upper St. Lawrence, and Lower Canadian provinces, are underlaid by the selfsame series of formations, the disintegration of which, has yielded the rich soils for which they are proverbial.

Economic Substances.

In a long and extensive survey such as that of last season's, little time could be devoted to searching for minerals, which is more properly the work of the prospector, that of the geologist being to point out where the most favorable conditions prevailed, so as to be able to direct the operations of the former into the right channels.

Around the shores of Bay D'Espoir, and on the valley of the Bay East River, frequent indications of the ores of iron, galena, copper and chromite present themselves. But as these have been all treated of by Mr. Murray in his report for 1870, it is unnecessary to repeat his remarks here.

In the vicinity of Pipestone Pond, chromic and magnetic iron ores were met with, especially the latter, in such quantities, scattered about the surface, in the shape of angular lumps and fragments, as to lead to the supposition that a large deposit of this ore must exist somewhere in that neighborhood. Arsenical pyrites and pyrrhotite, or magnetic pyrites, are frequently met with sparsely disseminated, chiefly in quartz veins. Serpentines of great variety, some of which would make pretty ornamental marbles when cut and polished, are abundant; and immense deposits of white chrystalline, granular, brown weathering dolomite, are in association with the serpentines. Some of these latter might yield fairly good marbles, if worked so as to get beyond the surface weathering. Dolomite burns into a good quick lime, yielding a strong cement. It is also employed in the manufacture of Epsom Salts, or Sulphate of Magnesia. Mr. Murray mentions the presence, amongst the serpentines here, of a great amount of picrolite, and frequent fine thin seams of asbestos. The latter form of this mineral is now becoming of more general use in the manufacture of incombustible materials for roofing purposes, and also largely used for steam-boiler packing, and lining of iron safes, being suitable thereto from its slow conduction of heat.

Many of the granites distributed over this region are admirably adapted for building-stones of superior quality, and amongst the mica schists on Crooked Lake, there is much material suitable for whetstones. The sandstones and conglomerates of the Noel Paul's and Exploits River are also well adapted for building purposes, and the value of the limestone deposits on Noel Paul's and

the Exploits River should the country ever become a settled agricultural region, must be clearly apparent.

The Museum.

During the past year many valuable and highly interesting specimens have been added to the collection in the Museum, and it is consequently assuming, more and more, the character of a truly representative exhibition of the natural products of the country. A great number of foreign specimens, also of more or less interest have been acquired. Chiefly the gratuituous contributions of such of our citizens as evince an interest in the institution. I am happy to state that this interest is growing with the growth of the Museum itself.

All classes of our people now visit it on every open day: but, as we have not yet arrived at keeping a visitors' book, I can only give a rough approximate of the actual numbers, I feel certain I am well within the mark when I put down the probable figures as averaging 100 persons per diem, or 1,200 per month, or say 15,000 for the past twelve months. That it is taking hold of the minds of the people generally, who highly appreciate it, the above figures necessarily imply.

There can be no question but that as an educational institution especially for the masses, a well stocked and well arranged Museum has no equal.

It contains that species of object lessons which appeal directly to the senses of even the most illiterate persons. But its value to the country is of still greater importance, as representing in a concise form its history, productions and industries, in such a manner as cannot be accomplished otherwise. The Museum is, as yet, however, very incomplete, especially in the natural history sections, and I regret to say I have been unable, owing to the insufficiency of means at my disposal, to render these latter, especially the ichthyological section, all that could be desired. Nevertheless, almost every day something new is added to the collection, and in course of time, I have no doubt of succeeding in rendering it thoroughly complete. Our late Governor Sir Henry Blake and his accomplished lady took the most lively interest in the Museum while here, nor did it cease upon their removing from our shores, for Her Ladyship arranged with Dr. Gunthur of the Natural History Depart-

ment of the British Museum, to effect exchanges of specimens as soon as we were in a position here to do so. This would be a great means of enhancing our collection, and I have had several similar offers from other persons, especially in the United States and Canada, but as yet I have but few duplicates to spare, and the expenses attending such exchanges would, for our limited means, be rather heavy.

Amongst the many contributors to the Museum during the past year, besides their Excellencies Sir Henry and Lady Blake, to whom we are indebted for several beautiful choncological, entomological, and other specimens; I may mention the following: Mr. T. R. Smith, a preserved caplin, also an Eskimo stone lamp; Rev. Mr. Johnson, a miniature bone Eskimo kayak and hunting gear; Mr. Wm. Slater, several Eskimo carved ornaments; Rev. W. Pilot, some Beothuck stone implements; Mr. Walter Clouston, a handsome collection of polished woods, and some curious Chinese nicknacks; Hon. P. Cleary, a section of floor-timber (oak), from the remains of the American privateer George, dredged up while excavating for the graving dock Riverhead; Capt. Laurie, several beautiful West India birds and snakes; the Municipal Council, the plate and coins from the foundation-stone of the old Riverhead Hospital; Mr. A. Bradshaw, mud from the Grand Bank; Mr. S. P. Parsons, one Bay Lynx (Lynx rufus); Mr. Earle of Fogo, an angler or fishing-frog (lophius piscatorius). Many smaller donations, especially of coins, were also received from various sources too numerous to specify.

There have been acquired by purchase, two cases of foreign birds, two most interesting skeletons with ornaments, of the aboriginal Beothucks, exhibiting the mortuary customs of the tribe in a very complete manner, and the following natural history specimens pertaining to the Island only:

Zoological.

Three woodland caribou deer, stag, doe and fawn, (Rangifer Terræ Novæ); three beaver, (castor fiber); one otter, (lutra canadensis); two black bear cubs, (urus americana); one brown weasel, (putorious—?); one marmot or whistler, (arctomys pruinosus), from Labrador; two hooded seals, female and young, (stemmato-

pus cristatus); tw bay seals, (phoca vitulina); one gray or horse-head seal, young, (halichœrus grypus).

Ornithological.

One wild dove, (Zanaidura Carolinensis?). One red-headed linnet, (ægiothus linaria). One pine gross beak, (pinicola enucleator). Two cross beaks, (loxia curvirostra americana). Several snow bunting; (plectrophanes nivalis). Two shore larks, (eremophila alpestris). One clapper rail, (rallus longirostris crepitans). One American coot, (fulica americana). Bittern, (botaurus mugitans). Mud hen, (gallenula galeata). Chicken hawk, (accipeter cooperi). Great horned owl, (bubo virginianus). Snowy owl, (nyctea scandiaca). Hawk owl, (surnia funerea). Canada jay, (perisoreus canadensis).

Two pair deers' antlers locked together, were brought home last season, and a deer skin canoe, such as is generally used by the Micmacs of the Island.

I hope to obtain those specimens of our prinnipedæ, or seals, required to complete that portion of the collection, during the present season.

A little assistance from those interested in the fisheries would enable me, in a short time also, to complete the ichthyological section, which is still very much behind hand. It is to be regretted that these, our great staple industries, should not, up to the present, be represented in the Museum in such a manner as their importance demands.

Were the Museum fully equipped and arranged in all its sections, I have reason to believe the Government and country at large might well feel proud of it; while to strangers visiting our shores it would afford a most interesting and attractive spectacle.

I have the honor to be, Sir,

Your obedient servant,

JAMES P. HOWLEY.